

## CLAIMS

1. A resist polymer solution prepared by dissolving a resist polymer, which comprises a repeating unit decomposable by the action of an acid and becoming  
5 alkali-soluble and a polar group-containing repeating unit, in one or more solvents for coating-film formation, wherein the amount of impurities having a boiling point at atmospheric pressure of not more than the boiling point of the solvent for coating-film formation is 1 mass% or less of the resist polymer.
- 10 2. The solution according to claim 1, wherein the solvent for coating film formation is a cyclic or linear compound having a boiling point at atmospheric pressure of 140°C or more and containing one or more polar groups selected from the group consisting of a carbonyl group, ester group, ether group, and hydroxyl group.
- 15 3. The solution according to claim 1 or 2, wherein the repeating unit decomposable by the action of an acid and becoming alkali-soluble contains an alicyclic skeleton having 5-20 carbon atoms.
- 20 4. The solution according to any one of claims 1 to 3, wherein the polar group-containing repeating unit contains at least one polar group selected from the group consisting of a phenolic hydroxyl group, carboxyl group, hydroxyfluoroalkyl group, lactone structure, and hydroxyalkyl group.
- 25 5. The solution according to any one of claims 1 to 4, wherein the amount of the resist polymer in the total resist polymer solution is in a range of 5-50 mass%.
6. A process for producing the solution according to any one of claims 1 to 5,

comprising the following steps (1) and (2):

(1) a redissolving step of redissolving a solid product containing the resist polymer in a solvent containing at least one solvent for coating-film formation (solvent (a)) and/or at least one solvent having a boiling point at atmospheric pressure not higher than the boiling point of the solvent (a) (solvent (b)) and

(2) an impurity-removing step of evaporating the solvent (b) and/or any excessive amount of solvent (a) from the redissolved solution obtained in the step (1) while optionally adding the solvent (a) under reduced pressure.

7. The process according to claim 6, wherein the solvent for redissolving used in the step (1) is a solvent containing at least one solvent (b).

8. The process according to claim 6 or 7, wherein the solvent (b) and any excessive amount of solvent (a) are evaporated from the redissolved solution under reduced pressure in the step (2).

9. The process according to any one of claims 6 to 8, wherein the rate of dissolution of the resist polymer in the solvent (b) is greater than the rate of dissolution of the resist polymer in the solvent (a).

10. The process according to any one of claims 6 to 9, wherein the solvent (b) is acetone, methyl ethyl ketone, tetrahydrofuran, ethylene glycol dimethyl ether, or ethyl acetate.

11. The process according to any one of claims 6 to 10, wherein the impurity-removing step (2) is conducted while controlling the temperature at 70°C or less.

12. A resist polymer solution produced by the process according to any one of claims 6 to 11.

- 5        13. A resist composition comprising the resist polymer solution according to any one of claims 1 to 5 or claim 12.